

On the Korean Species of the Genus *Erichsonius* (Coleoptera, Staphylinidae)

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Abstract The Korean species of the staphylinid genus *Erichsonius* are dealt with. Three new species are described under the names *E. (Sectophilonthus) takashii*, *E. (S.) wonhyosanus* and *E. (S.) coreanus*, and a key is given to these species. They are found from under dead leaves accumulated at the streamside, with the exception of a specimen of *E. (S.) coreanus* which was taken by FIT (Flight Interception Trap).

The members of the genus *Erichsonius* are usually found from under dead leaves accumulated at the streamside and widely distributed throughout the world. Only one species of this genus has hitherto been reported from Korea by CHO (1996, p. 163) as *E. japonicus*. After that, this record has been followed by CHO and AHN (2002, p. 66) and HERMAN (2001, p. 2595). Recently, we had an opportunity to examine a short series of interesting specimens of this genus obtained by the second author, Mr. Takashi WATANABE and others from several localities of the southern part of the Korean Peninsula and the Island of Jeju-do. As the result of close examination, they are classified into three species, all of which are new to science on account of disagreement in the configuration of the male genital organ with those of the previously known species. Therefore, we are going to describe them in the present paper.

Erichsonius (Sectophilonthus) takashii sp. nov.

(Figs. 1–4)

Body length: 3.9–4.3 mm (from front margin of head to anal end); 2.0–2.3 mm (from front margin of head to elytral apices).

Body elongate and somewhat depressed above. Colour dark reddish brown to brownish red and moderately shining, with mouth parts, basal two antennal segments,

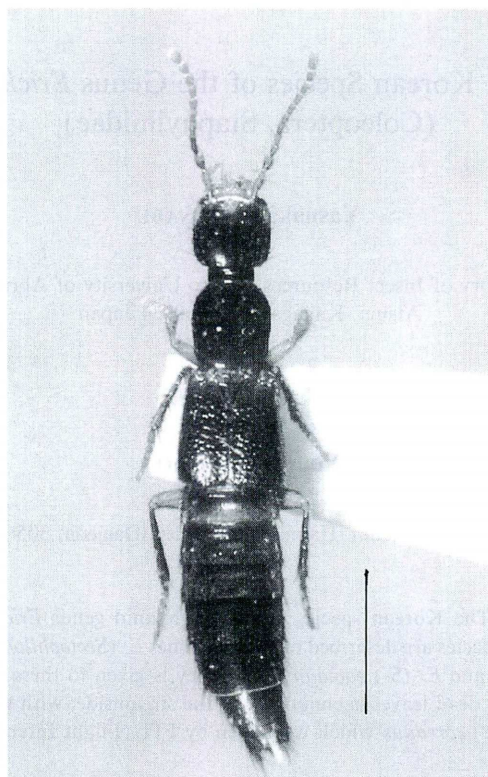
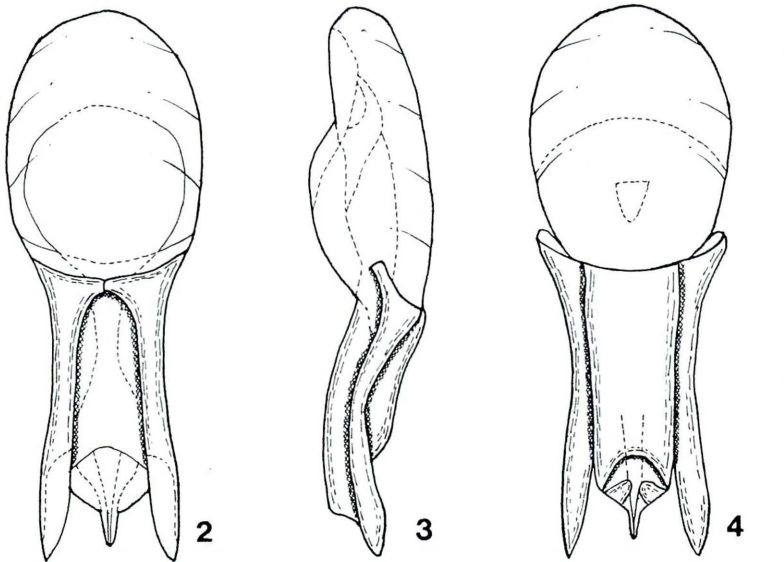


Fig. 1. *Erichsonius* (*Sectophilonthus*) *takashii* sp. nov., ♂, from Mt. Halla-san of Jeju-do, Korea.
Scale: 1.0 mm.

sometimes marginal areas of pronotum, and legs brownish yellow except for infuscate tibiae, elytra yellowish brown.

Male. Head quadrate and gently elevated medially, slightly transverse (width/length=1.04), postocular part gently arcuate and about 1.6 times as long as the longitudinal diameter of each eye, which is slightly prominent laterad; surface sparingly, coarsely and setiferously punctured except for impunctate median part which is relatively broad throughout its length, the punctures becoming slightly closer and smaller on the latero-basal parts, and covered with extremely fine coriaceous ground sculpture all over. Antennae elongate, extending to the middle of pronotum and slightly thickened towards the apical segments, basal segment polished, 2nd subopaque, the remainings opaque, 1st segment dilated apicad, about 2.5 times as long as broad, 2nd constricted at the base, 1.5 times as long as broad, considerably shorter ($2nd/1st=0.64$) than though as broad as 1st, 3rd apparently longer than broad (length/width=1.74), slightly shorter ($3rd/2nd=0.89$) and somewhat narrower ($3rd/2nd=0.77$) than 2nd, 4th to 9th nearly equal in length to one another though increasing in width towards the 9th, each slightly



Figs. 2-4. Male genital organ of *Erichsonius (Sectophilonthus) takashii* sp. nov., from Mt. Halla-san of Jeju-do, Korea; dorsal view (2), lateral view (3), and ventral view (4). Scale: 0.5 mm.

shorter than 3rd (each of 4th to 9th/3rd=0.80), 10th as long as broad, a little longer (10th/9th=1.16) and broader (10th/9th=1.23) than 9th, 11th distinctly longer than broad (length/width=1.38), apparently longer (11th/10th=1.49) and somewhat broader (11th/10th=1.08) than 10th, excavated at the apex.

Pronotum convex medially and somewhat trapezoidal, narrowed posteriad, a little longer than broad (length/width=1.04), apparently longer (pronotum/head=1.17) and somewhat broader (pronotum/head=1.17) than head, lateral sides slightly arcuate in anterior halves though straight or slightly emarginate in posterior halves, anterior margin arcuate, posterior margin rounded though nearly truncate at the middle, anterior angles narrowly rounded though invisible from above, posterior angles broadly rounded; surface provided with a longitudinal series of 5-8 strong setiferous punctures on each side of the middle and scattered with a number of setiferous punctures outside of the longitudinal series, and covered with microscopic coriaceous ground sculpture which is much finer than on head. Scutellum triangular, surface provided with a few fine setiferous punctures and covered with more distinct coriaceous ground sculpture than that on pronotum. Elytra subtrapezoidal and slightly dilated posteriad, slightly longer than broad (length/width=1.03), distinctly longer (elytra/pronotum=1.26) and apparently broader (elytra/pronotum=1.32) than pronotum; lateral sides nearly straight, posterior margin slightly emarginate at the middle, posterior angles rounded; surface somewhat sparingly covered with coarse punctures and fine brownish pubescence. Legs moderately long, basal four protarsal segments more or less widened.

Abdomen gradually narrowed towards the anal end, 3rd to 5th tergites each shallowly and transversely depressed along the base, 3rd to 6th tergites each more closely and much more finely punctured than on elytra and densely covered with brownish pubescence, 6th and 7th tergites each more sparingly punctured and pubescent than in the preceding tergites; 8th sternite provided with a small emargination at the middle of posterior margin.

Genital organ trilobed and symmetrical. Median lobe nearly parallel-sided except for apical part which is abruptly narrowed and produced into a bill, dorsal surface smooth, ventral surface distinctly emarginate at the middle in apical third. Parameres somewhat stout, slightly longer than median lobe, each more or less dilated in apical part which is membranous.

F e m a l e. Similar in facies to male, but the 1st to 4th protarsal segments are less widened and the 8th abdominal sternite is simply rounded at the middle of posterior margin.

Type series. Holotype: ♂, allotype: ♀, Seongpanak, Mt. Hallasan, E Jeju-do, Korea, 27-V-2003, T. WATANABE leg. Paratypes: 2♂♂, 3♀♀, same data as for the holotype; 1♂, Korea, Jeju-do, near Goepyeongioreum, Gyora-ri, Jocheon-eup, Bukjeju-gun, 30-V~17-VI-2003, Y-B. CHO leg.; 5♂♂, 5♀♀, Korea, Jeju Prov., Bukjeju-gun, Jocheoneup, Seongpanak, 27-VI-2003, M-J. JEON leg.; 1♂, 1♀, Korea, Jeonnam Prov., Boseong-gun, Bokrae-myeon, Mt. Dubong-san, N 34.92509, E 127.09701, 30-VII-2003, S-J. PARK & D-H. LEE leg. The type specimens are deposited in the collection of the Natural History Museum, Hannan University, Daejeon, Korea, except for some paratypes that are preserved in the collection of the Laboratory of Insect Resources, Tokyo University of Agriculture and Takashi WATANABE's private collection.

Distribution. Korea.

Remarks. The present new species is somewhat similar in configuration of male genital organ to that of *E. itoi* UHLIG et Y. WATANABE (1992, p. 39) from Japan, but is easily distinguishable from it by the following points: body larger; head and pronotum covered with much finer coriaceous ground sculpture, elytra much more sparingly and more coarsely punctured and median lobe of male genital organ more narrowly prolonged at the apex.

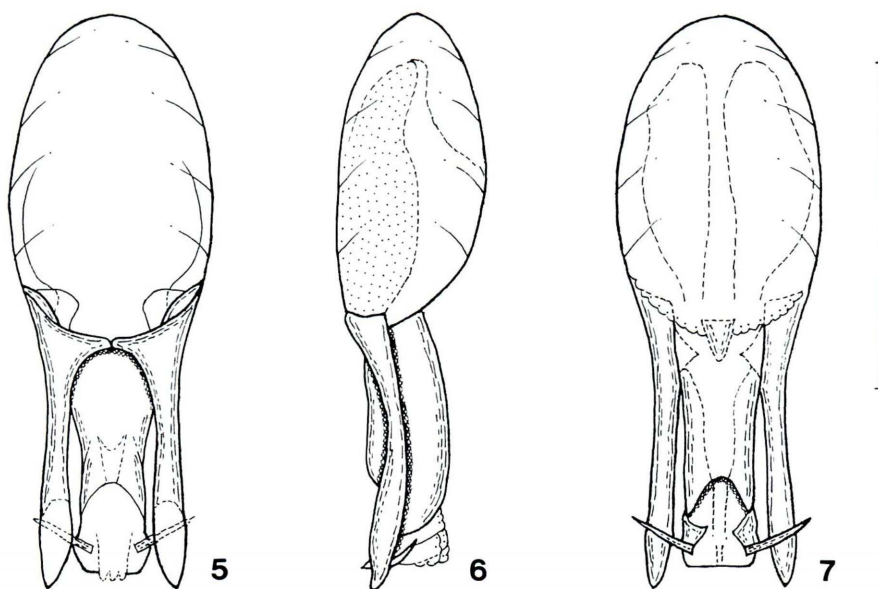
Bionomics. A number of type specimens were found from dead leaves accumulated at the streamside in a deciduous broadleaved forest on Mt. Hallasan at an altitude of 800 m. A paratype from Bukjeju-gun was obtained by FIT.

Etymology. The specific epithet of the present new species is given after Mr. Takashi WATANABE, who collected the holotype.

Erichsonius (Sectophilonthus) wonhyosanus sp. nov.

(Figs. 5–10)

Body length: 4.0–4.3 mm (from front margin of head to anal end); 1.9–2.0 mm (from front margin of head to elytral apices).



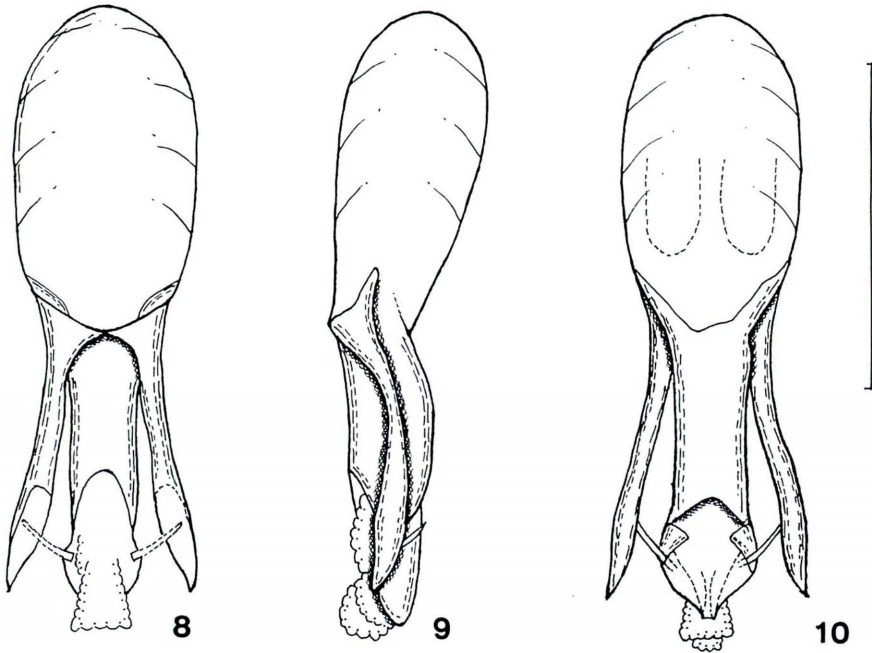
Figs. 5-7. Male genital organ of *Erichsonius (Sectophilonthus) wonhyosanus* sp. nov., from Mt. Wonhyo-san of Gyeongnam Prov., Korea; dorsal view (5), lateral view (6), and ventral view (7). Scale: 0.5 mm.

Body elongate, somewhat depressed above and subparallel-sided. Colour reddish brown and moderately shining, with mouth parts, coxae and femora reddish yellow, elytra and posterior margins of abdominal segments paler.

Male and female. Closely resembles the preceding species in body size and general appearance, but different from it in the following points:

Head quadrate, slightly more transverse ($\text{width/length} = 1.09$), postocular part almost straight and 1.5 times as long as the longitudinal diameter of each eye; surface covered with similar punctures and microscopic coriaceous ground sculpture as in the preceding species. Antennae elongate though slightly less thickened towards the apical segment, 6th to 9th almost equal in length to one another, each as long as broad, 10th somewhat transverse ($\text{width/length} = 1.17$), 11th similar in configuration to that of the preceding species. Pronotum relatively long as compared with that of the preceding species and a little longer than broad ($\text{length/width} = 1.17$), distinctly longer ($\text{pronotum/head} = 1.27$) than though as broad as head; surface similarly punctured as in the preceding species though covered with more distinct coriaceous ground sculpture than that of the preceding species. Elytra similar in configuration to those of the preceding species, slightly longer than broad ($\text{length/width} = 1.03$), apparently longer ($\text{elytra/pronotum} = 1.18$) and distinctly broader ($\text{elytra/pronotum} = 1.33$) than pronotum; surface covered with closer and more superficial punctures.

Abdomen less closely and somewhat more coarsely punctured than in the preceding



Figs. 8–10. Male genital organ of *Erichsonius (Sectophilonthus) wonhyosanus* sp. nov., from Nami Natural Recreation Forest, Chungnam Prov., Korea; dorsal view (8), lateral view (9), and ventral view (10). Scale: 0.5 mm.

species; 8th sternite in male subtriangularly excised but in female rounded at the middle of posterior margin.

Male genital organ trilobed and symmetrical as that of the preceding species; median lobe parallel-sided though slightly constricted at the middle, dorsal surface membranous in apical third and provided with a horn-like projection at each side of the middle before apical margin which is almost straight; parameres elongate and a little longer than median lobe, each somewhat widened in apical part which is membranous as in the preceding species.

Type series. Holotype: ♂, allotype: ♀, Korea, Gyeongnam Prov., Yangsan-shi, Daeseok-ri, Gajisan-Prov. Park, Mt. Wonhyosan, 9–VII–2002, Y-B. CHO leg.

The type specimens are preserved in the collection of the Natural History Museum, Hannan University, Daejeon, Korea.

Further specimen examined. 1♂, Korea, Chungnam Prov., Geoncheon-ri, Nami-myeon, Geumsan-gun, Nami Natural Recreation Forest, 4–VIII–2004, Y-B. CHO leg.

The specimen obtained in the Nami Natural Recreation Forest is somewhat different from the holotype in the length of the median lobe of male genital organ. It is prolonged posteriad in the apical membranous part, and is distinctly longer than parameres. However, the difference can be regarded as an infraspecific variation.

Distribution. Korea.

Bionomics. The holo- and allotypes were obtained by sifting dead leaves accumulated in a deciduous broadleaved forest on Mt. Wonhyo-san.

Etymology. The specific epithet of this new species is derived from Mt. Wonhyo-san, the type locality.

Erichsonius (Sectophilonthus) coreanus sp. nov.

(Figs. 11–13)

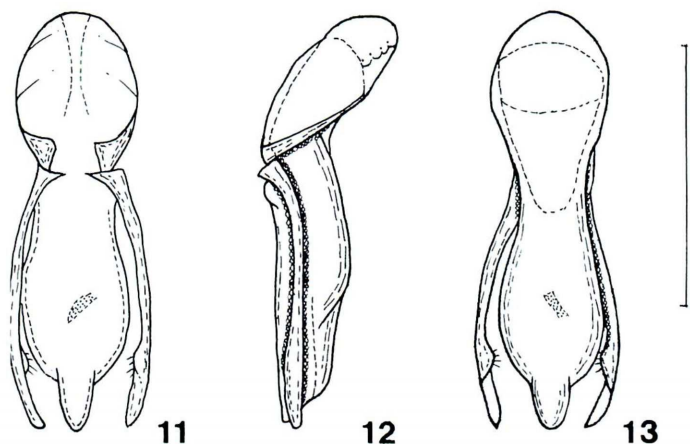
Erichsonius japonicus: CHO, 1996, Korean J. Zool., **39**: 163 [nec CAMERON, 1933]. — CHO & AHN, 2001, Insecta Koreana Suppl., **18**: 66 [nec CAMERON, 1933]. — HERMAN, 2001, Bull. Amer. Mus. nat. Hist., (265): 2595 [nec CAMERON, 1933].

Body length: 3.5–3.8 mm (from front margin of head to anal end); 1.8–1.9 mm (from front margin of head to elytral apices).

Body elongate, and subparallel-sided. Colour blackish brown to reddish brown and moderately shining, with mouth parts and legs yellow, though the latter is more or less infuscated in tibiae, antennae except for yellowish basal two segments, sutural and posterior marginal areas of elytra and posterior margin of each abdominal segment yellowish brown.

Similar in general appearance to the two preceding species, but readily distinguishable from them by the body smaller and the elytra covered with much closer and much finer punctures.

Male. Head subquadrate and somewhat convex, almost as long as broad, postocular part nearly straight and about 1.4 times as long as the longitudinal diameter of each eye which is slightly prominent laterally; surface very sparsely, coarsely and setiferously punctured except for the impunctate median longitudinal part, the punctures becoming more or less closer and smaller in the latero-posterior parts than in the other parts, and covered with extremely fine coriaceous ground sculpture visible under high magnification. Antennae elongate, extending to about anterior third of pronotum and slightly thickened towards the apical segment, basal segment polished, 2nd and 3rd subopaque, and the remainings opaque, 1st dilated apicad and remarkably longer than broad (length/width=2.33), 2nd constricted at the base, apparently longer than broad (length/width=1.33) but distinctly shorter (2nd/1st=0.57) than though almost as broad as 1st, 3rd elongate and about twice as long as broad, nearly as long as though apparently narrower (3rd/2nd=0.67) than 2nd, 4th 1.5 times as long as broad, though slightly shorter (4th/3rd=0.75) and nearly as broad as 3rd, 5th to 10th almost equal in length to one another and gradually increasing in width towards the 10th, 5th to 7th each slightly longer than broad, 8th as long as broad, slightly broader than 7th (8th/7th=1.09), 9th (width/length=1.20) and 10th (width/length=1.28) each transverse, 11th twice as long as and apparently broader (11th/10th=1.25) than 10th, excavated at the apex.



Figs. 11–13. Male genital organ of *Erichsonius* (*Sectophilonthus*) *coreanus* sp. nov., from Andong of Gyeongbuk Prov., Korea; dorsal view (11), lateral view (12), and ventral view (13). Scale: 0.5 mm.

Pronotum convex medially and parallel-sided, considerably longer than broad (length/width = 1.21), distinctly longer (pronotum/head = 1.32) and somewhat broader (pronotum/head = 1.10) than head; lateral sides finely bordered, slightly arcuate in anterior halves and somewhat emarginate in posterior halves, anterior margin feebly arcuate though truncate at the middle, posterior margin rounded, anterior angles narrowly angulate though not visible from dorsal side, posterior angles rounded; surface more numerous and more coarsely punctured than on head except for a relatively broad smooth median space, and covered all over with similar microscopic ground sculpture to that on head. Scutellum triangular, surface provided with sparse fine setiferous punctures and covered with more distinct coriaceous ground sculpture than on pronotum. Elytra subtrapezoidal and somewhat dilated posteriad, slightly longer than broad (length/width = 1.03), distinctly longer (elytra/pronotum = 1.10) and apparently broader (elytra/pronotum = 1.29) than pronotum; lateral sides slightly arcuate, posterior margin somewhat emarginate at the middle, posterior angles rounded; surface densely, finely, superficially punctured and closely covered with fine brownish pubescence. Legs moderately long and relatively slender, protarsi slightly widened.

Abdomen gradually narrowed towards the anal end, 3rd to 5th tergites each shallowly and transversely depressed along the base, 3rd to 5th tergites each less densely and less coarsely punctured than in elytra and covered with longer and coarser brownish pubescence than that of elytra; 8th tergite much more sparingly punctured and pubescent than in the preceding tergites; 8th sternite shallowly and semicircularly emarginate at the middle of posterior margin.

Genital organ trilobed and symmetrical as that of the two preceding species; median lobe somewhat constricted in basal third though clearly dilated to before the apical constriction, apical part produced into a tongue; parameres elongate and almost as long

as median lobe, each somewhat expanded into a subtriangular part before the apex, the expanse provided with four fine setae.

Female. Similar in facies to male, though the 1st to 4th protarsal segments are not so clearly widened and the abdomen with the 8th sternite rounded at the middle of posterior margin.

Type series. Holotype: ♂, allotype: ♀, Korea, Gyeongbuk Prov., Nokjeon-myeon, Andong, 10-VIII-1986, K-S. LEE leg. Paratype: 1♀, same data as for the holotype; 1♂, Gyeongnam Prov., Sanam-myeon, Sacheon-shi, 20-VI-1986, K-S. LEE leg.; 1♀, Korea, Chungbuk Prov., Naesu-myeon, Cheongwon-gun, 25-V-1986, K-S. LEE leg.; 1♂, Korea, Jeju-do, Mt. Dongsuak, Namwon-eup, Namjeju-gun, 30-VIII-1997, Y-B. CHO leg.; 1♂, 1♀, Seongpanak, Mt. Halla-san, E Jeju-do, Korea, 27-V-2003, T. WATANABE leg.; 1♀, Korea, Jeju Prov., Bukjeju-gun Jocheoneug, Seongpanak, 27-VI-2003, M-J. JEON leg. The type specimens are preserved in the collection of the Natural History Museum, Hannam University, Daejeon, except for 3 paratypes (1♂, 2♀♀) which are deposited in the collection of the Laboratory of Insect Resources, Tokyo University of Agriculture.

Distribution. Korea.

Remarks. The present new species has been reported from Korea by CHO (1996, p. 163) and CHO and AHN (2001, p. 66) under misidentification. The male genital organ of this species is clearly different in configuration of fused paramere from the previously known species.

Bionomics. One paratype (♀) from Jeju-do was obtained together with *E. takashii* from under dead leaves accumulated at the streamside on Mt. Halla-san at an altitude of 800 m.

Key to the Korean Species of *Erichsonius*

All the Korean species of *Erichsonius* belong to the subgenus *Sectophilonthus*.

1. Head quadrate and slightly transverse, elytra somewhat sparingly and coarsely punctured2.
2. Male genital organ with median lobe produced into a bill at the middle of apical margin and without horn-like projection at each side of the middle before the apical margin *E. takashii* sp. nov.
- 2'. Male genital organ with median lobe almost truncate at the apex and provided with a horn-like projection at each side of the middle before apical margin.....
..... *E. wonhyosanus* sp. nov.
- 1'. Head oblong and slightly longer than broad, elytra densely and finely punctured
..... *E. coreanus* sp. nov.

Acknowledgments

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要 約

渡辺泰明・趙 永福：韓国産ヒメホソハネカクシ属について。——これまで韓国からは、ヒメホソハネカクシ属に含まれる種として、ツヤヒメホソハネカクシただ1種が報告されているに過ぎなかった。最近、筆者らは、この個体を含め韓国内で採集された、この属に含まれる一連の個体を検討する機会を得た。この結果、2種を未記載種と認めたので、これらを *Erichsonius* (*Sectophilonthus*) *takashii*, および *E. (S.) wonhyosanus* とそれぞれ命名・記載した。また、先にツヤヒメホソハネカクシとして報告された個体は、ツヤヒメホソハネカクシとは雄交尾器の形状が明らかに異なり、この種も未記載種と判定されたので、*Erichsonius* (*Sectophilonthus*) *coreanus* と命名・記載した。

References

- CAMERON, M., 1933. New species of Staphylinidae (Col.) from Japan. *Ent. monthly Mag.*, **69**: 168–175.
- CHO, Y. B., 1996. Studies on the tribe Philonthini (Coleoptera: Staphylinidae) from Korea. I. Genera *Neobisnius* GANGLBAUER and *Erichsonius* FAUV. *Korean J. Zool.*, **39**: 159–163.
- & K. AHN, 2001. Insects of Korea 11. *Insecta Koreana Suppl.*, **18**. 167 pp. Nat. Ins. Agric. Sci. & Tech., Suwon, Korea.
- HERMAN, L. H., 2001. Catalog of the Staphylinidae (Insecta: Coleoptera). 1758 to the end of the second millennium. V. Staphylinini group (part 2) Staphylininae: Diochini, Maorothiini, Othiini, Platyprosopini, Staphylinini (Amblyopinina, Anisolinina, Hyptiomina, Philonthina). *Bull. Amer. Mus. nat. Hist.*, (265): i–v + 2441–3020.
- UHLIG, M., & Y. WATANABE, 1992. Revision of the Japanese species of the genus *Erichsonius* FAUVEL (Coleoptera, Staphylinidae, Philonthini). *Mitt. zool. Mus. Berl.*, **68**: 3–92.